

特 許 協 力 条 約

PCT

国際予備審査報告

(法第12条、法施行規則第56条)
〔PCT36条及びPCT規則70〕

出願人又は代理人 の書類記号 H1696-01	今後の手続きについては、国際予備審査報告の送付通知（様式PCT/ IPEA/416）を参照すること。	
国際出願番号 PCT/JPO3/02825	国際出願日 (日.月.年) 11.03.2003	優先日 (日.月.年) 11.03.2002
国際特許分類 (IPC) Int. Cl. B60S1/02 H01R4/02		
出願人 (氏名又は名称) 日本板硝子株式会社		

- 国際予備審査機関が作成したこの国際予備審査報告を法施行規則第57条（PCT36条）の規定に従い送付する。
- この国際予備審査報告は、この表紙を含めて全部で 3 ページからなる。
☒ この国際予備審査報告には、附属書類、つまり補正されて、この報告の基礎とされた及び/又はこの国際予備審査機関に対してした訂正を含む明細書、請求の範囲及び/又は図面も添付されている。
(PCT規則70.16及びPCT実施細則第607号参照)
この附属書類は、全部で 2 ページである。
- この国際予備審査報告は、次の内容を含む。
 - ☒ 国際予備審査報告の基礎
 - ☐ 優先権
 - ☐ 新規性、進歩性又は産業上の利用可能性についての国際予備審査報告の不作成
 - ☐ 発明の単一性の欠如
 - ☒ PCT35条(2)に規定する新規性、進歩性又は産業上の利用可能性についての見解、それを裏付けるための文献及び説明
 - ☐ ある種の引用文献
 - ☐ 国際出願の不備
 - ☐ 国際出願に対する意見

国際予備審査の請求書を受理した日 08.10.2003	国際予備審査報告を作成した日 27.05.2004		
名称及びあて先 日本国特許庁 (IPEA/JP) 郵便番号100-8915 東京都千代田区霞が関三丁目4番3号	特許庁審査官 (権限のある職員) 三澤 哲也	3Q	3216
電話番号 03-3581-1101 内線 3379			

I. 国際予備審査報告の基礎

1. この国際予備審査報告は下記の出願書類に基づいて作成された。(法第6条(PCT14条)の規定に基づく命令に
 応答するために提出された差し替え用紙は、この報告書において「出願時」とし、本報告書には添付しない。
 PCT規則70.16, 70.17)

☐ 出願時の国際出願書類

☒ 明細書 第 1-11 ページ、 出願時に提出されたもの
 明細書 第 ページ、 国際予備審査の請求書と共に提出されたもの
 明細書 第 ページ、 付の書簡と共に提出されたもの

☒ 請求の範囲 第 1-10, 17, 18 項、 出願時に提出されたもの
 請求の範囲 第 項、 PCT19条の規定に基づき補正されたもの
 請求の範囲 第 項、 国際予備審査の請求書と共に提出されたもの
 請求の範囲 第 11 項、 08.03.2004 付の書簡と共に提出されたもの

☒ 図面 第 1-5 ページ/図、 出願時に提出されたもの
 図面 第 ページ/図、 国際予備審査の請求書と共に提出されたもの
 図面 第 ページ/図、 付の書簡と共に提出されたもの

☐ 明細書の配列表の部分 第 ページ、 出願時に提出されたもの
 明細書の配列表の部分 第 ページ、 国際予備審査の請求書と共に提出されたもの
 明細書の配列表の部分 第 ページ、 付の書簡と共に提出されたもの

2. 上記の出願書類の言語は、下記に示す場合を除くほか、この国際出願の言語である。

上記の書類は、下記の言語である _____ 語である。

- ☐ 国際調査のために提出されたPCT規則23.1(b)にいう翻訳文の言語
☐ PCT規則48.3(b)にいう国際公開の言語
☐ 国際予備審査のために提出されたPCT規則55.2または55.3にいう翻訳文の言語

3. この国際出願は、ヌクレオチド又はアミノ酸配列を含んでおり、次の配列表に基づき国際予備審査報告を行った。

- ☐ この国際出願に含まれる書面による配列表
☐ この国際出願と共に提出された磁気ディスクによる配列表
☐ 出願後に、この国際予備審査(または調査)機関に提出された書面による配列表
☐ 出願後に、この国際予備審査(または調査)機関に提出された磁気ディスクによる配列表
☐ 出願後に提出した書面による配列表が出願時における国際出願の開示の範囲を超える事項を含まない旨の陳述書の提出があった
☐ 書面による配列表に記載した配列と磁気ディスクによる配列表に記録した配列が同一である旨の陳述書の提出があった。

4. 補正により、下記の書類が削除された。

☐ 明細書 第 _____ ページ
☒ 請求の範囲 第 12-16, 19 項
☐ 図面 図面の第 _____ ページ/図

5. ☐ この国際予備審査報告は、補充欄に示したように、補正が出願時における開示の範囲を越えてされたものと認められるので、その補正がされなかったものとして作成した。(PCT規則70.2(c) この補正を含む差し替え用紙は上記1.における判断の際に考慮しなければならず、本報告に添付する。)

V. 新規性、進歩性又は産業上の利用可能性についての法第12条(PCT35条(2))に定める見解、それを裏付ける文献及び説明

1. 見解

新規性(N)	請求の範囲	1-11, 17, 18	有
	請求の範囲		無
進歩性(IS)	請求の範囲		有
	請求の範囲	1-11, 17, 18	無
産業上の利用可能性(IA)	請求の範囲	1-11, 17, 18	有
	請求の範囲		無

2. 文献及び説明(PCT規則70.7)

文献1: JP 57-041763 B2 (セントラル硝子株式会社, 福田金属箔粉工業株式会社) 1982.09.04
 文献2: JP 2002-001581 A (株式会社フジクラ) 2002.01.08
 文献3: JP 2002-011593 A (三菱電気株式会社) 2002.01.15
 文献4: JP 06-058557 U (旭硝子株式会社) 1994.08.12
 文献5: JP 61-037182 Y2 (日本板硝子株式会社) 1986.10.28

請求の範囲1-3、17に係る発明は、国際調査報告で引用された文献1(第1ページ, 左欄第34行-右欄第14行参照)と従来周知の技術(国際調査報告で引用された文献2の第3ページ, 左欄第25行-第28行及び文献3の第3ページ, 左欄第41行-第45行参照)とにより進歩性を有しない。文献1のはんだ合金として、Agを2~4質量%含有しSnを主成分とする従来周知の無鉛はんだ合金を用いることは、当業者にとって容易である。

請求の範囲4に係る発明は、上記文献1と従来周知の技術(国際調査報告で引用された文献4の図1及び文献5の第3図参照)とにより進歩性を有しない。

請求の範囲5-10、18に係る発明は、上記文献1と従来周知の技術(上記文献2-5参照)とにより進歩性を有しない。はんだの材料としてSnを主成分とする無鉛はんだ合金を使用することは、従来周知の技術であることから(上記文献2及び文献3等参照)、文献1のはんだ合金として前記Snを主成分とする無鉛はんだ合金を用いるとともに、金具とガラス物品との接合強度を向上させるために、接合面積を適宜変更すること(上記文献5等参照)は、当業者にとって容易である。

請求の範囲11に係る発明は、上記文献1と従来周知の技術(上記文献2-5参照)とにより進歩性を有しない。金具とガラス物品との間に適量のはんだ合金を流し込むことは、当業者にとって自明の事項である。

7. 前記無鉛はんだ合金が Ag を 1.5 ～ 5 質量%含有する請求項 5 に記載のガラス物品。

5 8. 前記導電性被膜が、アンテナおよびデフォグから選ばれる少なくとも一方である請求項 5 に記載のガラス物品。

9. 前記導電性被膜が、Ag 粒子およびガラスフリットを含む銀ペーストを焼成して形成した請求項 5 に記載のガラス物品。

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10. 前記金具が、前記少なくとも 2 つの接合面を備えた脚部と、前記脚部から上方に突出し、ケーブルに接続される接続部とを含む金属端子である請求項 5 に記載のガラス物品。

15 11. (補正後) 前記少なくとも 2 つの接合面のそれぞれにおいて、前記無鉛はんだ合金の体積が、当該接合面の面積と前記無鉛はんだ合金の厚みとの積の 1.0 ～ 2.0 倍である請求項 5 に記載のガラス物品。

12. (削除)

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13. (削除)

1 4 . (削除)

1 5 . (削除)

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1 6 . (削除)

1 7 . 請求項 1 のガラス物品を含み、

10 前記金具の接続部にケーブルが接続され、前記ケーブルと前記導電性
被膜とが電氣的に接続した接合構造。

1 8 . 請求項 5 のガラス物品を含み、

前記金具の接続部にケーブルが接続され、前記ケーブルと前記導電性
被膜とが電氣的に接続した接合構造。

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1 9 . (削除)

PATENT COOPERATION TREATY

PCT



Translation

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference H1696-01	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/JP2003/002825	International filing date (<i>day/month/year</i>) 11 March 2003 (11.03.2003)	Priority date (<i>day/month/year</i>) 11 March 2002 (11.03.2002)
International Patent Classification (IPC) or national classification and IPC B60S 1/02, H01R 4/02		
Applicant NIPPON SHEET GLASS COMPANY, LIMITED		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 3 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 2 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 08 October 2003 (08.10.2003)	Date of completion of this report 27 May 2004 (27.05.2004)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

JP2003/002825

I. Basis of the report

1. With regard to the elements of the international application:*

- ☐ the international application as originally filed
- ☒ the description:
pages 1-11, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☒ the claims:
pages 1-10,17,18, as originally filed
pages _____, as amended (together with any statement under Article 19
pages _____, filed with the demand
pages 11, filed with the letter of 08 March 2004 (08.03.2004)
- ☒ the drawings:
pages 1-5, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☒ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☒ the claims, Nos. 12-16,19
- ☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

JP03/02825

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims	1-11, 17, 18	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	1-11, 17, 18	NO
Industrial applicability (IA)	Claims	1-11, 17, 18	YES
	Claims		NO

2. Citations and explanations

- Document 1: JP, 57-041763, B2 (Central Glass Co., Ltd., Fukuda Metal Foil & Powder Industrial Co., Ltd.), September 4, 1982 (09.04.82)
Document 2: JP, 2002-001581, A (Fujikura Ltd.), January 8, 2002 (01.08.02)
Document 3: JP, 2002-011593, A (Mitsubishi Electric Corporation), January 15, 2002 (01.15.02)
Document 4: JP, 06-058557, U (Asahi Glass Co., Ltd.), August 12, 1994 (08.12.94)
Document 5: JP, 61-037182, Y2 (Nippon Sheet Glass Co., Ltd.), October 28, 1986 (10.28.86)

The inventions of claims 1-3 and 17 do not appear to involve an inventive step based on document 1 (see page 1, left column, line 34 to right column, line 14) cited in the ISR and known prior art (see document 2, page 3, left column, lines 25-28, and document 3, page 3, left column, lines 41-45 cited in the ISR). It would be easy for a party skilled in the art to use the known unleaded solder comprising Sn as a primary component and 2-4% of Ag as the solder alloy of document 1.

The invention of claim 4 does not appear to involve an inventive step based on document 1 and known prior art (see document 4, Fig. 1, and document 5, Fig. 3 cited in the ISR).

The inventions of claims 5-10 and 18 do not appear to involve an inventive step based on document 1 and known prior art (see documents 2-5). Using an unleaded solder alloy comprising Sn as a primary component for a solder material is a well-known art (see documents 2 and 3 etc.); therefore, it would be easy for a party skilled in the art to use an unleaded solder alloy comprising Sn as a primary component for the solder alloy of document 1, and to change the area of joined surfaces accordingly to improve joining strength between a metal piece and a glass article (see document 5 etc.).

The invention of claim 11 does not appear to involve an inventive step based on document 1 and known prior art (see documents 2-5). It would be obvious to a party skilled in the art to pour a suitable amount of solder alloy between a metal piece and a glass article.

CLAIMS

1. A glass article with a metal member joined thereto, comprising:
an electroconductive coating film formed on at least a part of a
5 surface of the glass article by baking a silver paste that includes Ag particles
and a glass frit,
wherein a joining plane of the metal member is fixed onto the
electroconductive coating film with a lead-free solder alloy containing Sn as a
main component, and the lead-free solder alloy contains at least 1.5 mass% of
10 Ag.
2. The glass article according to claim 1, wherein the lead-free solder
alloy contains 2 to 4 mass% of Ag.
- 15 3. The glass article according to claim 1, wherein the electroconductive
coating film is at least one selected from an antenna and a defogger.
4. The glass article according to claim 1, wherein the metal member is a
metal terminal comprising a leg part having at least two joining planes and a
20 connection part that projects upward from the leg part and is to be connected
to a cable.
5. A glass article with a metal member joined thereto, comprising:
an electroconductive coating film containing Ag,
25 wherein the electroconductive coating film is formed on at least a part
of a surface of the glass article, at least two joining planes of the metal
member are fixed onto the electroconductive coating film with a lead-free
solder alloy containing Sn as a main component, and a total area of the at
least two joining planes is in a range of 37 mm² to 50 mm².
30
6. The glass article according to claim 5, wherein the total area is in a
range of 40 mm² to 45 mm².
7. The glass article according to claim 5, wherein the lead-free solder
35 alloy contains 1.5 to 5 mass% of Ag.
8. The glass article according to claim 5, wherein the electroconductive

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coating film is at least one selected from an antenna and a defogger.

9. The glass article according to claim 5, wherein the electroconductive coating film is formed by baking a silver paste that includes Ag particles and a glass frit.

10. The glass article according to claim 5, wherein the metal member is a metal terminal comprising a leg part having the at least two joining planes and a connection part that projects upward from the leg part and is to be connected to a cable.

11. A glass article with a metal member joined thereto, comprising:
an electroconductive coating film containing Ag,
wherein the electroconductive coating film is formed on at least a part of a surface of the glass article, at least two joining planes of the metal member are fixed onto the electroconductive coating film with a lead-free solder alloy containing Sn as a main component, and with respect to each of the at least two joining planes, a volume of the lead-free solder alloy is 1.0 to 2.0 times the product of an area of the joining plane concerned and a thickness of the lead-free solder alloy.

12. The glass article according to claim 11, wherein a total area of the at least two joining planes is in a range of 37 mm² to 50 mm².

13. The glass article according to claim 11, wherein the lead-free solder alloy contains 1.5 to 5 mass% of Ag.

14. The glass article according to claim 11, wherein the electroconductive coating film is at least one selected from an antenna and a defogger.

15. The glass article according to claim 11, wherein the electroconductive coating film is formed by baking a silver paste that includes Ag particles and a glass frit.

16. The glass article according to claim 11, wherein the metal member is a metal terminal comprising a leg part having the at least two joining planes and a connection part that projects upward from the leg part and is to be

connected to a cable.

17. A junction structure, comprising a glass article according to claim 1,
wherein a cable is connected to a connection part of the metal member,
5 and the cable and the electroconductive coating film are connected electrically
to each other.
18. A junction structure, comprising a glass article according to claim 5,
wherein a cable is connected to a connection part of the metal member,
10 and the cable and the electroconductive coating film are connected electrically
to each other.
19. A junction structure, comprising a glass article according to claim 11,
wherein a cable is connected to a connection part of the metal member,
15 and the cable and the electroconductive coating film are connected electrically
to each other.